

Claims

What is Claimed is:

1. A process for the production of special effect multi-layer coatings, comprising the successive steps:

- (1) applying a 10 to 30 μm thick base coat layer onto a substrate provided with an EDC primer,
- (2) applying a clear coat layer onto the base coat layer,
- (3) jointly curing the base coat and clear coat layers,

wherein the base coat layer is applied in a first and second layer, wherein the first layer comprises a modified water-borne base coat produced by mixing an unmodified water-borne base coat with an admixture component and the second layer comprises the unmodified water-borne base coat, wherein the unmodified water-borne base coat has a ratio by weight of pigment content to resin solids content of 0.05:1 to 0.6:1 and wherein the pigment content of the unmodified water-borne base coat comprises 0.1 to 5 wt.%, relative to the resin solids content of the unmodified water-borne base coat, of at least one metal flake pigment having a thickness of 10 to 100 nm and at least one additional special effect pigment and wherein the composition of the pigment content is such that UV light transmission through the base coat layer formed of modified water-borne base coat and unmodified water-borne base coat is less than 0.1% in the wavelength range of from 290 to 380 nm and less than 0.5% in the wavelength range of from 380 to 400 nm.

2. The process of claim 1, wherein the unmodified water-borne base coat contains 0.3 to 2 wt.%, relative to the resin solids content of the unmodified water-borne base coat, of metal flake pigment having a thickness of 10 to 100 nm.

3. The process of claim 1 or 2, wherein the film thickness of the first base coat layer of the modified water-borne base coat is 5 to 20 μm and the film thickness of the second base coat layer of the unmodified water-borne base coat is 2 to 10 μm .
4. The process of claim 1, 2 or 3, wherein the pigment content consists of 50 to 100 wt.% of special effect pigments and of 0 to 50 wt.% of at least one pigment selected from the group consisting of white, colored and black pigments. (1)
5. The process of claim 1, 2 or 3, wherein the pigment content consists of 98 to 100 wt.% of special effect pigments and of 0 to 2 wt.% of at least one pigment selected from the group consisting of white, colored and black pigments. (1)
6. The process of any one of the preceding claims, wherein the modified water-borne base coat is applied by electrostatically-assisted high-speed rotary atomization and the unmodified water-borne base coat is pneumatically spray-applied. (1)
7. The process of any one of the preceding claims, wherein the admixture component imparts primer surfacer properties. (1)
8. The process of any one of the preceding claims, wherein the admixture component is selected from the group consisting of polyisocyanate crosslinking agents, polyurethane resins and filler pastes. (1)
9. The process of any one of the preceding claims, wherein the substrate is selected from the group consisting of automotive bodies and body parts. (1)